

REMARKS

At the outset, Applicants thank the Examiner for the thorough review and consideration of the pending application. The Office Action dated September 29, 2004 has been received and its contents carefully reviewed.

Preliminarily, Applicants note the present Office Action Summary indicates that claims 11-14 are currently withdrawn from consideration. It is respectfully submitted, however, that claims 11 and 12 were canceled in the preliminary amendment filed January 14, 2004. Accordingly, claims 1-10, 13, and 14 are currently pending, of which claims 13 and 14 are currently withdrawn from consideration. Reexamination and reconsideration of the pending claims is respectfully requested.

In the Office Action, the Examiner objected to claim 1 as allegedly containing various informalities. Specifically, the Examiner asserted that claim 1 merely comprises “a linear polarizer, a retardation film, a liquid crystal layer, a cholesteric liquid crystal color filter and a black background” and that “the claim recites a listing of elements without any clear relationship among the limitations.” Applicants, however, respectfully disagree.

Claim 1 recites:

“[a] reflective liquid crystal display comprising: a linear polarizer for converting natural light into linearly polarized light; a retardation film for converting the linearly polarized light into circularly polarized light; a liquid crystal layer for receiving the circularly polarized light and varying the phase of the circularly polarized light depending on the presence of an applied electric field; a cholesteric liquid crystal color filter for receiving the circularly polarized light from the liquid crystal layer, and selectively reflecting the circularly polarized light received from the liquid crystal layer; and a black background for absorbing a portion of light passing through the color filter.”

As is evident, claim 1 does not merely recite a list of structurally isolated elements comprising “a linear polarizer, a retardation film, a liquid crystal layer, a cholesteric liquid crystal color filter and a black background,” as asserted by the Examiner. Accordingly, it appears as though the Examiner is equating language such as “for converting natural light into linearly polarized light,” occurring after “linear polarizer,” “for converting the linearly polarized

light into circularly polarized light,” occurring after “retardation film;” etc., as functional language and, therefore, not considering the substance of it. As set forth at M.P.E.P. § 2173.05(g), however, there is nothing inherently wrong with functionally characterizing some part of a claim limitation in functional terms. A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the art. In the present case, the language “for converting the linearly polarized light into circularly polarized light,” occurring after “retardation film,” fairly conveys to one of ordinary skill in the art that it must at least some spatial relationship between the retardation film and the linear polarizer, which converts natural light into the linearly polarized light, that places the retardation film on the side of the linear polarizer from which linearly polarized light is transmitted. Similar arguments may be made with respect to each of the other listed elements (i.e., the liquid crystal layer, the cholesteric liquid crystal color filter, and the black background). For at least the reasons provided above, Applicants respectfully request withdrawal of the present objection to claim 1.

In the Office Action, the Examiner rejected claims 1-6 under 35 U.S.C. § 103(a) as being allegedly unpatentable over the related art shown in Figure 1 in view of Anderson et al. (U.S. Patent No. 6,339,464) and Lu et al. (U.S. Patent No. 5,493,430). This rejection is respectfully traversed and reconsideration is requested.

As set forth at M.P.E.P. § 2143.01, that the references individually relied upon teach all aspects of the claimed invention is not sufficient -- there must be some objective reason to combine the teachings of the references. Further, each reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention (see § 2141.02).

Nevertheless, in rejecting claim 1, the Examiner acknowledges that the related art shown in Figure 1 fails to disclose “a cholesteric liquid crystal color filter for receiving the circularly polarized light from the liquid crystal layer ...” and “a black background for absorbing a portion of light passing through the color filter.” Attempting to cure the deficiency of the related art shown in Figure 1, the Examiner relies upon Anderson et al. to supply the missing cholesteric liquid crystal color filter and relies upon Lu et al. to supply the missing black

background. The Examiner further states it would have been obvious to “modify the ... [related art shown in Figure 1] in view of Anderson for improved color stability and operating life” and that it would have been obvious to “modify the ... [related art shown in Figure 1] in view of Lu for contrast and for high contrast ratios.”

Assuming *arguendo* that each of the references cited above actually disclose what they are alleged to disclose, Applicants respectfully submit that the present rejection merely establishes that all elements were individually disclosed in the related art shown in Figure 1, Anderson et al., and Lu et al. Moreover, and assuming *arguendo* sufficient motivation exists to: 1) modify the related art shown in Figure 1 using Anderson et al. and to; 2) modify the related art shown in Figure 1 using Lu et al., the Examiner has proffered no motivation indicating that one of ordinary skill in the art would modify the related art shown in Figure 1 simultaneously suing Anderson et al. and Lu et al. and arrive at claim 1.

Specifically, the cholesteric color filter of Anderson et al. is an RGB color filter (see Anderson et al., col. 5, ll. 5-11). Moreover, while Lu et al. discusses a benefit of painting back plates of reflective array with black paint as “[providing] for high contrast ratios,” such benefits are only observed with respect to monochrome displays (see Lu et al., col. 1, ll. 39-45). Lu et al. further discusses “substantial limitations” of using “black as a background,” in conjunction with displays capable of expressing red and blue colors. Specifically, Lu et al. teaches that “for some colors, such as red and blue, contrast is very poor,” “the colors presented are of relatively poor quality and appear grayish in hue,” and “the background color appears to mix in with that of the reflecting state... [such that] when the background is black, the color reflected appears particularly dark and dull...” (see Lu et al., col. 1, ll. 42-56). Accordingly, when read in its entirety, Applicants respectfully submit that Lu et al. actually teaches away from using such black layers within displays that express colors such as red and blue -- the very colors that the RGB color filter of Anderson et al. provides. Accordingly, Applicants respectfully submit that the Examiner has failed to set forth sufficient motivation to simultaneously combine Anderson et al. and Lu et al. with the related art shown in Figure 1 as suggested by the Examiner, and arrive at claim 1. For at least these reasons, Applicants respectfully request withdrawal of the present rejection under 35 U.S.C. § 103(a).

As set forth in M.P.E.P. § 2143.03, if an independent claim is nonobvious under 35 U.S.C. § 103 then any claim depending therefrom is nonobvious. Therefore, Applicants respectfully submit that claims 2-6, which depend from claim 1, are also nonobvious under § 103.

In the Office Action, the Examiner rejected claims 7-10 under 35 U.S.C. § 103(a) as being allegedly unpatentable over the related art shown in Figure 1 in view of Anderson et al. and Lu et al. and further in view of Needham et al. (U.S. Patent No. 4,589,734). This rejection is respectfully traversed and reconsideration is requested.

Excepting the discussion of Needham et al., the substance of the rejection of claim 7 is substantially identical to the substance of the rejection of claim 1. Therefore, the arguments presented above with respect to the rejection of claim 1 are equally applicable to the rejection of claim 7. For at least this reason, Applicants respectfully request withdrawal of the present rejection under 35 U.S.C. § 103(a).

As mentioned above, M.P.E.P. § 2143.03 sets forth that if an independent claim is nonobvious under 35 U.S.C. § 103 then any claim depending therefrom is nonobvious. Therefore, Applicants respectfully submit that claims 8-10, which depend from claim 7, are also nonobvious under § 103.

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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